IN THE CLAIMS

1. (Original) A data storage media, comprising:

a substrate comprising at least one plastic portion, an edge lift height of less than about 8 μ, a surface roughness of less than about 10Å, and an axial displacement peak of less than about 500 μ under shock or vibration excitation; and

at least one data layer on said substrate;

wherein said data layer can be at least partly read from, written to, or a combination thereof by at least one energy field; and

wherein, when the energy field contacts said data storage media said energy field is incident upon said data layer before it could be incident upon said substrate.

2. (Original) The data storage media as in Claim 1, wherein said substrate further comprises an edge-lift height is less than about 5 μ.

3. (Original) The data storage media as in Claim 2, wherein said edge-lift height is less than about 3 μ.

4. (Original) The data storage media as in Claim 1, wherein said surface roughness is less than about 5 Å.

5. (Original) The data storage media as in Claim 1, wherein said substrate further comprises a mechanical damping coefficient of greater than about 0.04 at a temperature of 24°C.

6. (Original) The data storage media as in Claim 5, wherein said mechanical damping coefficient is greater than about 0.06 at a temperature of 24°C.

7. (Original) The data storage media as in Claim 1, wherein said substrate further comprises a moment of inertia of less than about 5.5×10^{-3} slug-in^2.

8. (Original) The data storage media as in Claim 1, wherein said substrate further comprises a radial tilt and tangential tilt independently of less than about 1° each.

9. (Original) The data storage media as in Claim 1, wherein a moisture content of said substrate varies less than about 0.5% at equilibrium under test conditions of 80°C at 85% relative humidity after 4 weeks.

10. (Original) The data storage media as in Claim 1, wherein said substrate further comprises a specific gravity of less than about 1.0.

11. (Original) The data storage media as in Claim 1, wherein said substrate further comprises a resonant frequency of greater than about 250 Hz.

12. (Original) The data storage media as in Claim 1, wherein said substrate further comprises a first modal frequency greater than an operating frequency.

13. (Original) The data storage media as in Claim 1, wherein said substrate further comprises one or less modal frequencies less than an operating frequency.

14. (Original) The data storage media as in Claim 1, wherein said substrate further comprises a core having a substantially constant thickness.

15. (Original) The data storage media as in Claim 1, wherein said substrate further comprises a core having a varied thickness.

16. (Original) The data storage media as in Claim 1, wherein said substrate further comprises a core having a cross-sectional geometry selected from the group consisting of concave, convex, tapered, and combinations comprising at least one of the foregoing core geometries.

17. (Original) The data storage media as in Claim 1, wherein said substrate further comprises a core having a core outer diameter substantially equal to a substrate outer diameter.

18. (Original) The data storage media as in Claim 1, wherein said substrate further comprises a core having a geometry selected from the group consisting of at least one radial arm, at least one ring, star-like, and combinations comprising at least one of the foregoing geometries.

19. (Original) The data storage media as in Claim 1, wherein said substrate further comprises a core comprising at least one hollow cavity.

20. (Original) The data storage media as in Claim 1, wherein said substrate further comprises a core comprising at least one filled cavity.

21. (Previously Presented) The data storage media as in Claim 20, wherein said filled cavity comprises a material selected from the group consisting of glass, foams, carbon, metals, ceramics, thermoplastics, thermosets, rubbers, among others and composites, alloys and combinations comprising at least one of the foregoing materials.

22. (Original) The data storage media as in Claim 1, wherein said substrate further comprises a core comprising multiple portions.

23. (Original) The data storage media as in Claim 22, wherein said multiple portions comprise different materials.

24. (Original) The data storage media as in Claim 1, wherein said substrate further comprises preformed core.

25. (Original) The data storage media as in Claim 1, wherein said substrate further comprises a core formed in situ with said substrate.

26. (Previously Presented) The data storage media as in Claim 1, wherein said substrate consists essentially of plastic.

27. (Original) The data storage media as in Claim 26 wherein said plastic comprises a resin selected from the group consisting of polyvinyl chloride, polyolefins, polyesters, polyimide, polyamides, polysulfones, polyether imides, polyether sulfones, polyphenylene sulfides, polyether ketones, polyether ether ketones, ABS resins, polystyrenes, polybutadiene, polyacrylates, polyacrylonitrile, polyacetals, polycarbonates, polyphenylene ethers, ethylene-vinyl acetate copolymers, polyvinyl acetate, liquid crystal polymers, ethylene-tetrafluoroethylene copolymer, aromatic polyesters, polyvinyl fluoride, polyvinylidene fluoride, polyvinylidene chloride, tetrafluoroethylene fluorocarbon polymers, and blends, copolymers, mixtures, reaction products, and composites comprising at least one of the foregoing resins.

28. (Original) The data storage media as in Claim 1, wherein said data layer has a coercivity of greater than about 1,500 oersted.

29. (Original) The data storage media as in Claim 28, wherein said coercivity is greater than about 3,000 oersted.

30. (Previously Presented) A data storage media, comprising:

a substrate comprising at least one plastic portion and an axial displacement peak of less than about 500 μ under shock or vibration excitation, an areal density of about 10 Gbit/in^2, and a surface roughness of less than about 10Å; and

at least one data layer on said substrate;

wherein said data layer can be at least partly read from, written to, or a combination thereof by at least one energy field; and

wherein, when the energy field contacts said storage media said energy field is incident upon said data layer before it could be incident upon said substrate.

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31. (Original) The data storage media as in Claim 30, wherein said axial displacement peak is less than about 150 μ.

32. (Original) The data storage media as in Claim 30, wherein said edge-lift height is less than about 5 μ.

33. (Previously Presented) The data storage media as in Claim 32, wherein said edge-lift height is less than about 3 μ.

34. (Original) The data storage media as in Claim 30, wherein said surface roughness is less than about 5Å.

35. (Original) The data storage media as in Claim 30, wherein said substrate further comprises a mechanical damping coefficient of greater than about 0.04 at a temperature of 24°C.

36. (Previously Presented) The data storage media as in Claim 35, wherein said mechanical damping coefficient is greater than about 0.06 at a temperature of 24°C.

37. (Original) The data storage media as in Claim 30, wherein a moisture content of said substrate varies less than about 0.5% at equilibrium under test conditions of 80°C at 85% relative humidity after 4 weeks.

38. (Original) The data storage media as in Claim 30, wherein said substrate further comprises a radial tilt of less than about 1°.

39. (Original) The data storage media as in Claim 30, wherein said substrate further comprises a core having a substantially constant thickness.

40. (Original) The data storage media as in Claim 30, wherein said substrate further comprises a core having a varied thickness.

41. (Original) The data storage media as in Claim 30, wherein said substrate further comprises a core having a cross-sectional geometry selected from the group consisting of concave, convex, tapered, and combinations comprising at least one of the foregoing core geometries.

42. (Original) The data storage media as in Claim 30, wherein said substrate further comprises a core having a core outer diameter substantially equal to a substrate outer diameter.

43. (Original) The data storage media as in Claim 30, wherein said substrate further comprises a core having a geometry selected from the group consisting of at least one radial arm, at least one ring, star-like, and combinations comprising at least one of the foregoing geometries.

44. (Original) The data storage media as in Claim 30, wherein said substrate further comprises a core comprising at least one hollow cavity.

45. (Original) The data storage media as in Claim 30, wherein said substrate further comprises a core comprising at least one filled cavity.

46. (Original) The data storage media as in Claim 45, wherein said filled cavity comprises a material selected from the group consisting of glass, foams, carbon, metals, ceramics, thermoplastics, thermosets, rubbers, among others and composites, alloys and combinations comprising at least one of the foregoing materials.

47. (Original) The data storage media as in Claim 30, wherein said substrate further comprises a core comprising multiple portions.

48. (Original) The data storage media as in Claim 47, wherein said multiple portions comprise different materials.

49. (Original) The data storage media as in Claim 30, wherein said substrate further comprises preformed core.

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50. (Original) The data storage media as in Claim 30, wherein said substrate further comprises a core formed in situ with said substrate.

51. (Original) The data storage media as in Claim 30, wherein substrate further comprises a moment of inertia of less than about 5.5×10^{-3} slug-in^2.

52. (Original) The data storage media as in Claim 51, wherein said moment of inertia is less than about 4.5×10^{-3} slug-in^2.

53. (Original) The data storage media as in Claim 52, wherein said moment of inertia is less than about 4.0×10^{-3} slug-in^2.

54. (Original) The data storage media as in Claim 30, wherein said data layer has a coercivity of greater than about 1,500 oersted.

55. (Original) The data storage media as in Claim 54, wherein said coercivity is greater than about 3,000 oersted.

56. (Original) A data storage media, comprising:

a substrate comprising at least one plastic resin portion and a core, wherein said core further comprises a varied thickness; and

at least one data layer disposed on said substrate.

57. (Original) The data storage media as in Claim 56, wherein said core comprises a cross-sectional geometry selected from the group consisting of concave, convex, tapered, and combinations comprising at least one of the foregoing core geometries.

58. (Original) The data storage media as in Claim 56, wherein said core comprises a core outer diameter substantially equal to a substrate outer diameter.

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59. (Original) The data storage media as in Claim 56, wherein said core comprises a geometry selected from the group consisting of at least one radial arm, at least one ring, star-like, and combinations comprising at least one of the foregoing geometries.

60. (Original) The data storage media as in Claim 56, wherein said core comprises at least one hollow cavity.

61. (Original) The data storage media as in Claim 56, wherein said substrate further comprises a core comprising at least one filled cavity.

62. (Original) The data storage media as in Claim 61, wherein said filled cavity comprises a material selected from the group consisting of glass, foams, carbon, metals, ceramics, thermoplastics, thermosets, rubbers, among others and composites, alloys and combinations comprising at least one of the foregoing materials.

63. (Original) The data storage media as in Claim 56, wherein said core comprises multiple portions.

64. (Original) The data storage media as in Claim 63, wherein said multiple portions comprise different materials.

65. (Original) The data storage media as in Claim 56, wherein said core is preformed.

66. (Original) The data storage media as in Claim 56, wherein said core is formed in situ with said substrate.

67. (Previously Presented) The data storage media as in Claim 56, wherein said substrate consists essentially of plastic.

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68. (Original) The data storage media as in Claim 67, wherein said plastic comprises a resin selected from the group consisting of polyvinyl chloride, polyolefins, polyesters, polyimide, polyamides, polysulfones, polyether imides, polyether sulfones, polyphenylene sulfides, polyether ketones, polyether ether ketones, ABS resins, polystyrenes, polybutadiene, polyacrylates, polyacrylonitrile, polyacetals, polycarbonates, polyphenylene ethers, ethylene-vinyl acetate copolymers, polyvinyl acetate, liquid crystal polymers, ethylene-tetrafluoroethylene copolymer, aromatic polyesters, polyvinyl fluoride, polyvinylidene fluoride, polyvinylidene chloride, tetrafluoroethylene fluorocarbon polymer, and blends, copolymers, mixtures, reaction products, and composites comprising at least one of the foregoing resins.

69. (Original) The data storage media as in Claim 67, wherein said substrate further comprises reinforcement selected from the group consisting of fibers, whiskers, fibrils, nanotubes, particulate, and combinations comprising at least one of the foregoing reinforcements.

70. (Original) The data storage media as in Claim 69, wherein said reinforcement is selected from the group consisting of metal, mineral, ceramic, glass, and combinations comprising at least one of the foregoing reinforcements.

71. (Original) The data storage media as in Claim 56, wherein said data layer has a coercivity of greater than about 1,500 oersted.

72. (Original) The data storage media as in Claim 71, wherein said coercivity is greater than about 3,000 oersted.

73. (Previously Presented) The data storage media as in Claim 1, wherein said plastic portion comprises pits and grooves.

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74. (Previously Presented) The data storage media as in Claim 30, wherein said plastic portion comprises pits and grooves.

75. (Previously Presented) The data storage media as in Claim 56, wherein said plastic portion comprises pits and grooves.